

### **REMARKS**

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of December 2, 2004 is respectfully requested.

The Examiner requested the Applicant's cooperation in reviewing the Application to correct any errors in the specification of which the Applicant may become aware. In view of the Examiner's request, the entire specification and abstract have now been reviewed, and several editorial corrections have been made as indicated above. However, no new matter has been added. Thus, the Examiner is respectfully requested to enter the above-indicated changes to the specification.

On page 2 of the Office Action, the Examiner rejected original dependent claims 10 and 20 under 35 USC § 112, second paragraph, as being indefinite. In particular, the Examiner asserted that each of the rejected dependent claims recites the phrase "said dresser" which phrase lacks the necessary antecedent basis. In view of the Examiner's rejection, dependent claims 10 and 20 have now been amended as indicated above so as to comply with all of the requirements of 35 USC § 112. In view of amended dependent claims 10 and 20, it is respectfully submitted that the Examiner's formal rejections under § 112 have been overcome.

The Examiner rejected elected claims 1-10 and 12-20 as being anticipated by the Brunelli reference (USP 5,957,750); rejected claims 11 and 21 as being unpatentable over the Brunelli reference in view of the Yang reference (USP 6,749,484), the Monroe reference (USP 6,227,939), or the Wise reference (USP 6,020,262); and rejected claims 10 and 20 as being unpatentable over the Brunelli reference in view of the Yang reference. The Examiner also provisionally rejected claims 1-12 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 28-31 of co-pending application No.10/352,852 (the '852 application). However, the Examiner is requested to note that the original claims have been amended as indicated above. For the reasons discussed below, it is respectfully submitted that the amended claims are clearly patentable over the prior art of record.

Each of independent claims 1, 12, and 13 has now been amended to clarify that the

polishing tool (in claims 1 and 13) or processing circumstance (in claim 12) is ***kept*** at a temperature ***lower than*** a glass transition temperature of the polishing tool. As explained on page 11, lines 7-28 of the specification, if a workpiece is polished at a temperature higher than a glass transition temperature of a polishing tool, the thermoplastic resin material of the polishing tool will change from a solid state to a viscous state, and the viscous thermoplastic resin material is easily attached to the surface of the workpiece being polished. Although the undesirable thermoplastic resin material attached to the workpiece can be removed by, for example, sulfuric acid and oxygenated water, this removal step requires additional unnecessary work. In view of this problem, the present invention has been designed in order to *keep* at least a portion of a polishing tool or a processing circumstance at a temperature *lower than* a glass transition temperature of the polishing tool. Therefore, prevention of the thermoplastic resin material of the polishing tool from reaching a viscous state is ensured so as to significantly reduce or eliminate the attachment of the viscous resin material onto the workpiece.

The Brunelli reference discloses a method and apparatus for controlling a temperature of a polishing pad. As noted by the Examiner, the Brunelli reference teaches that a planarizing surface of a polishing pad attains approximately its glass transition temperature (see abstract). However, as explained above, the claims of the present application have been amended to clarify that at least a part of the polishing tool or a processing circumstance is *kept* at a temperature *lower than* a glass transition temperature of the polishing tool. As will be explained below, it is submitted that the Brunelli reference does not disclose or even suggest this feature.

In column 3, lines 37-39 of the Brunelli reference, it is explained that the planarizing surface of the polishing pad is controlled to be *at least* approximately 98% of a glass transition temperature of polishing pad material that comprises the polishing pad. Throughout the Brunelli reference, it is explained that the polishing pad is *heated* so that the temperature will be *at least* approximately equal to the glass transition temperature of the polishing pad material (see, e.g., column 3, lines 45-56 and 52-57; and column 4, lines 13-14). Thus, it is clearly implied, if not expressly taught, in the Brunelli reference that the

temperature which is approximately equal to the glass transition temperature is a minimum, and that the temperature can, at least on occasion, reach levels higher than the glass transition temperature. As a result, it is submitted that the Brunelli reference clearly does not teach **keeping** at least a part of a polishing tool (or a processing circumstance) at a temperature *lower than* a glass transition temperature of the polishing tool.

Moreover, the Brunelli reference teaches heating the polishing pad so that the polishing pad reaches at least the glass transition temperature so that the polishing pad material softens and becomes easier to remove (see column 6, lines 54-60). This, of course, is in direct contrast to the object of the present invention as explained above, which is to maintain the temperature *lower than* the glass transition temperature to *prevent* material removal from the polishing tool. Therefore, the Brunelli reference actually *teaches away* from the object of the present invention. Therefore, one of ordinary skill in the art would not even be motivated to modify the Brunelli reference to *keep* at least a part of a polishing tool (or a processing circumstance) at a temperature *lower than* a glass transition temperature of the polishing tool.

Furthermore, the Yang reference, the Monroe reference, and the Wise reference also do not disclose or suggest keeping at least a portion of a polishing tool (or a processing circumstance) at a temperature *lower than* a glass transition temperature of the polishing tool. Therefore, one of ordinary skill in the art would not be motivated by these references to modify the Brunelli reference in a manner that would result in the invention recited in amended independent claims 1, 12, and 13. Accordingly, it is respectfully submitted that amended independent claims 1, 12, and 13, and the claims that depend therefrom, are clearly patentable over the prior art of record.

With respect to the Examiner's *provisional* double patenting rejection, the Examiner is requested to note that claims 28-31 of the '852 application were cancelled in an Amendment filed on October 18, 2004, and no corresponding claims were added. Furthermore, a Notice of Allowance was issued November 10, 2004 in the '852 application, the issue fee was paid on January 27, 2005, and an issue notification was mailed on February 23, 2005. Therefore, no further amendments to resubmit cancelled claims 28-31

will be made in the '852 application. Consequently, it is respectfully submitted that the Examiner's provisional double patenting rejection is no longer applicable in view of the prosecution of the '852 application.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. However, if the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact the Applicant's undersigned representative.

Respectfully submitted

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